

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

REMARKS

Claims 1-8 and 10-21 are now in the application. Claims 1-8, 10 and 21 are directed to the elected invention. Claims 11-20 are drawn to the non-elected invention and may be cancelled by the examiner upon the allowance of the claims directed to the elected invention. Claim 3 and 4 have been amended to recite, "...having a structure such that an oxyalkylene group is bound to a polyhydric alcohol residue having, on average, not less than three hydroxyl groups in each molecule, ..." in place of "...having a structure such that an oxyalkylene group is bound to a polyhydric alcohol residue,...". The amendment to claims 3 and 4 finds support on page 19, line 5-7 of the application.

Claim 8 has been amended to recite "...a polyalkyleneimine unsaturated monomer (A1)..." in place of "...a monomer (A)...". This amendment to claim 8 finds support on page 39, line 32 to page 40, line 3 of the application.

Claim 14 has been amended to recite "the polycarboxylic acid copolymer obtained by a method of producing a polycarboxylic acid copolymer comprising copolymerizing monomer components comprising a monomer (A) having an oxyalkylene group and an unsaturated carboxylic acid monomer (B) using a hydrophobic chain transfer agent" in place of "the polycarboxylic acid copolymer according to Claim 10".

Newly presented claim 21 finds support on page 39, line 32 to page 40, line 3 of the application.

Therefore, these amendments do not introduce any new matter.

Claims 3, 4, and 8-10 were rejected under 35 U.S.C. 102(b) as being anticipated by JP-07-010943. The cited reference fails to anticipate claims 3, 4, 8 and 10. JP-07-010943 suggests copolymers obtained by a monomer having oxyalkylene group and other monomers. However, the monomer having oxyalkylene group in this reference has a structure such that an oxyalkylene group is bound to an alcohol residue having one hydroxyl group in each molecule. In contrast, the polyalkylene glycol unsaturated monomer (A2) in amended claim 3 and hydroxyl-terminated, polyalkylene glycol unsaturated monomer (A2') in amended claim 4 of the present application, having an oxyalkylene group, have a structure such that an oxyalkylene group is bound to a

polyhydric alcohol residue having, on average, not less than three hydroxyl groups in each molecule.

Therefore, present claims 3 and 4 differ from the cited reference and are novel since the cited reference fails to disclose the recitation related to the polyhydric alcohol residue having, on average, not less than three hydroxyl groups in each molecule.

With respect to claims 8 and 10, as mentioned above, the cited reference fails to disclose a polyalkylene glycol unsaturated monomer (A2) or a hydroxyl-terminated, polyalkylene glycol unsaturated monomer (A2') of the present invention.

Therefore, amended claim 8 and claim 10 differ from the cited reference and are novel since the cited references disclose nothing about both the content and character of monomers (A2) and (A2') of the present invention.

Claims 3-4, and 6-7 were rejected under 35 U.S.C. 102 (b) as being anticipated by US Patent 4,471,100 to Tsubakimoto et al. Tsubakimoto et al. fail to anticipate claims 3-4 and 6-7. Tsubakimoto et al. suggest a method of making a copolymer comprising at least one oxyalkylene-containing monomer and a maleic acid type monomer. However, the oxyalkylene-containing monomer in this reference has the structure such that an oxyalkylene group is bound to an alcohol residue having one hydroxyl group in each molecule.

Therefore, claims 3-4 and 6-7 differ from the cited reference and are novel for the same reason mentioned above concerning JP-07-010943.

Claims 3-4, and 6-10 were rejected under 35 U.S.C. 102 (b) or 102 (a) as being anticipated by JP-07-247150 or JP-2000-159555 or JP-2000-247706 or JP-2000-319054 or U.S.P. 5,911,820 to Satoh et al. These cited references fail to anticipate claims 3-4 and 6-10.

These cited references suggest a process of making a copolymer used for cement admixture, etc. However, monomers used for making the copolymer have the structure such that an oxyalkylene group is bound to an alcohol residue having one hydroxyl group in each molecule. The cited references fail to disclose a polyalkylene glycol unsaturated monomer (A2) or a hydroxyl-terminated, polyalkylene glycol unsaturated monomer (A2') of the present invention.

Therefore, amended claims 3-4 and claims 6-7 differ from the cited reference and are novel for the same reasons mentioned above for JP-07-010943.

With respect to claims 8 and 10, as mentioned above, these cited references fail to disclose a polyalkylene glycol unsaturated monomer (A2) or a hydroxyl-terminated, polyalkylene glycol unsaturated monomer (A2') of the present invention.

Therefore, amended claim 8 and claim 10 differ from the cited references and are novel since the cited references disclose nothing about both the content and character of monomers (A2) and (A2') of the present invention.

Claim 1 was rejected under 35 USC 102(b) as being anticipated by EP 0 174 644. This reference fails to anticipate claim 1. EP 0 174 644 suggests a concrete admixture comprising a polymer derived from polyethyleneimine reacting with (meth)acrylic acid and alkylene oxide. On the other hand, a polycarboxylic acid copolymer of the present invention is obtained by copolymerization of monomer components comprising a polyalkyleneimine unsaturated monomer (A1) and an unsaturated carboxylic acid monomer (B) or monomer components comprising a polyalkylene glycol unsaturated monomer (A2) having a structure such that an oxyalkylene group is bound to a polyhydric alcohol residue having, on average, not less than three hydroxyl groups in each molecule, and an unsaturated carboxylic acid monomer (B).

The cited reference suggests a carboxylic acid introduced polymer produced by michael addition of a carboxylic acid to a polyethyleneimine which does not have unsaturated bonding. The carboxylic acid is not introduced by the polymerization reaction. For example, in example 19 of the reference, the product is poly(2-carboxypropyl) polyethyleneimine and it is produced by the introduction of a plurality of 2-carboxypropyl moieties to polyethyleneimine. It consists of a number of units wherein one or two carboxylic acid groups (2-carboxypropyl) are added and does not contain a polycarboxylic acid (polymethacrylic acid) unit which is produced by a polymerization reaction.

In contrast, the present invention discloses copolymers obtained by copolymerization of a polyalkyleneimine unsaturated monomer and an unsaturated carboxylic acid monomer. The polyalkyleneimine monomer used has unsaturated

bonding and in case methacrylic acid is, for example, used as the unsaturated carboxylic acid monomer, a poly(methacrylic acid monomer / polyalkyleneimine monomer) is obtained which contains polymethacrylic acid unit.

Accordingly, claim 1 is patentable over EP 0 174 644.

Claims 1-2, 5 and 8-10 were rejected under 35 USC 102(b) as being anticipated by JP 11-269239. This cited reference fails to anticipate claims 1-2, 5 and 8-10. JP 11-269239 suggests a graft polymer obtained by polymerizing an alkylene oxide with a polyalkyleneimine, and a saturated carboxylic acid monomer. However, the polyalkyleneimine in the reference fails to disclose a polymer made by the monomer having unsaturated bonding.

Accordingly, claims 1-2 and 5 are patentable over JP 11-269239.

With respect to claims 8 and 10 as mentioned above, the polyalkyleneimine in the cited reference does not have unsaturated bonding and the reference fails to disclose a polyalkylene glycol unsaturated monomer (A2) or a hydroxyl-terminated, polyalkylene glycol unsaturated monomer (A2') of the present invention.

Therefore, amended claims 8 and claim 10 differ from the cited reference and are novel since the cited references disclose nothing about both the content and character of monomers (A2) and (A2') of the present invention.

Furthermore, the present invention differs from the cited references in that cement additives comprising the polycarboxylic acid copolymer of the present invention are suitable for use as water reducing agents for ultra high strength concrete which can suitably be used not only in ordinary strength concrete and high strength concrete, but also in ultra high strength concrete as described on page 10, lines 30-35 of the present application.

The cited references fail to anticipate the present invention. In particular, anticipation requires the disclosure, in a prior art reference, of each and every recitation as set forth in the claims. See *Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), *Orthokinetics, Inc. v. Safety Travel Chains, Inc.*, 1 USPQ2d 1081 (Fed. Cir. 1986), and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 USPQ2d 1241 (Fed. Cir. 1986).

There must be no difference between the claimed invention and reference disclosure for an anticipation rejection under 35 U.S.C. 102. See *Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 USPQ2d 1001 (CAFC 1991) and *Studiengesellschaft Kohl GmbH v. Dart Industries*, 220 USPQ 841 (CAFC 1984).

Also, the cited art lacks the necessary direction or incentive to those of ordinary skill in the art to render a rejection under 35 USC 103 sustainable. The cited art fails to provide the degree of predictability of success of achieving the properties attainable by the present invention needed to sustain a rejection under 35 USC 103. See *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315 (Fed. Cir. 1988), *In re Mercier*, 185 USPQ 774 (CCPA 1975) and *In re Naylor*, 152 USPQ 106 (CCPA 1966).

Moreover, the properties of the subject matter and improvements which are inherent in the claimed subject matter and disclosed in the specification are to be considered when evaluating the question of obviousness under 35 USC 103. See *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d. 1923 (Fed. Cir. 1990), *In re Antonie*, 195, USPQ 6 (CCPA 1977), *In re Estes*, 164 USPQ (CCPA 1970), and *In re Papesch*, 137 USPQ 43 (CCPA 1963).

No property can be ignored in determining patentability and comparing the claimed invention to the cited art. Along these lines, see *In re Papesch*, supra, *In re Burt et al*, 148 USPQ 548 (CCPA 1966), *In re Ward*, 141 USPQ 227 (CCPA 1964), and *In re Cescon*, 177 USPQ 264 (CCPA 1973).

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event that the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

Please charge any necessary fees or credit any overpayment to Deposit Account 22-0185.

Dated: 2-11-04

Respectfully submitted,

By 
Burton A. Amernick

Registration No.: 24,852
CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800
Washington, DC 20036-3425
202-331-7111
202-293-6229 (fax)
Attorney for Applicant